1. A link quality determination unit for determining a link quality of a transmission link between an OFDM transmitter and an OFDM receiver of an OFDM transmission system, wherein:

said link quality determination unit comprises a signal power variation determining unit adapted to determine the signal power variation of the reception signal in the receiver and at least a first link quality measure determination unit adapted to determine a first link quality measure representing the variation of the subcarrier signal power on the basis of the signal power variation as determined by the signal power variation determining unit.

2. A link quality determination unit according to claim 1, further comprising:

a channel coefficient estimator which is adapted to determine estimates of the channel coefficients for the respective subcarriers;

a signal power determining unit which is adapted to determine the signal power by averaging the power of the estimated channel coefficients over a plurality of subcarriers; and wherein:

said signal power variation determining unit is adapted to determine, as the signal power variation, the signal power variance by determining the difference between the power of the estimated channel coefficients on the respective subcarrier and the signal power, by determining the absolute value of the difference, by squaring the absolute value of the difference, and by averaging the squared absolute value over a plurality of subcarriers.

3. A link quality determination unit according to claim 2, wherein:

said first link quality measure determination unit is adapted to determine said first link quality measure by determining a ratio of the signal power variation to the squared signal power.

4. A link quality determination unit for determining a link quality of a transmission link between an OFDM transmitter and an OFDM receiver of an OFDM transmission system, wherein:

said link quality determination unit comprises a signal-to-noise variation determining unit adapted to determine the signal-to-noise variation of the reception signal in the receiver and at least a first link quality measure determination unit adapted to determine a first link quality measure representing the variation of the signal-to-noise ratio on the basis of the signal-to-noise variation as determined by the signal-to-noise variation determining unit.

5. A link quality determination unit according to claim 4, further comprising:

a channel coefficient estimator which is adapted to determine estimates of the channel coefficients for the respective subcarriers; and

a noise sample estimate determining unit which is adapted to determine a noise sample estimate for each subcarrier in each OFDM symbol; wherein

said signal-to-noise variation determining unit is adapted to determine as the signal-to-noise variation the signal-to-noise variance by determining a SNR mean value by respectively summing the power of the channel estimation coefficients and the power of the noise samples over the plurality of subcarriers and by forming the ratio thereof and by determining the ratio of the power of the respective channel coefficient estimate for the respective subcarrier to the power of the respective noise sample estimate for the respective subcarrier, by subtracting from this ratio the SNR mean value, determining the absolute value of the subtraction result, squaring the absolute value and averaging the determined absolute values over a plurality of subcarriers.

6. A link quality determination unit according to claim 1, further comprising:

a noise power determination unit adapted to determine the noise power; and

a second link quality measure determination unit which is adapted to determine a second link quality measure representing the average subcarrier signal-to-noise power ratio on the basis of the noise power as determined by the noise power determination unit.

7. A link quality determination unit according to claim 4, further comprising:

a noise power determination unit adapted to determine the noise power; and

a second link quality measure determination unit which is adapted to determine a second link quality measure representing the average subcarrier signal-to-noise power ratio on the basis of the noise power as determined by the noise power determination unit.

8. A link quality determination unit according to claim 6, further comprising:

a channel coefficient estimator which is adapted to determine estimates of the channel coefficients for the respective subcarriers;

a signal power determining unit which is adapted to determine the signal power by averaging the power of the estimated channel coefficients over a plurality of subcarriers;

said noise power determination unit including a noise sample estimate determining unit which is adapted to determine a noise sample estimate for each subcarrier in each OFDM symbol; and

a noise sample averaging unit which is adapted to determine the noise power by averaging the squared absolute values of the noise sample estimates over a plurality of subcarriers,

wherein said second link quality measure determination unit is adapted to determine said second link quality measure by determining the ratio of the determined signal power to said determined noise power.

9. A link quality determination unit according to claim 7, further comprising:

a channel coefficient estimator which is adapted to determine estimates of the channel coefficients for the respective subcarriers;

a signal power determining unit which is adapted to determine the signal power by averaging the power of the estimated channel coefficients over a plurality of subcarriers;

said noise power determination unit including a noise sample estimate determining unit which is adapted to determine a noise sample estimate for each subcarrier in each OFDM symbol; and

a noise sample averaging unit which is adapted to determine the noise power by averaging the squared absolute values of the noise sample estimates over a plurality of subcarriers,

wherein said second link quality measure determination unit is adapted to determine said second link quality measure by determining the ratio of the determined signal power to said determined noise power.

10. A link quality determination unit according to claim 8, wherein:
said noise sample averaging unit is further adapted to determine the noise power by averaging said noise sample estimate power also over a plurality of OFDM symbols.

11. A link quality determination unit according to claim 9, wherein:
said noise sample averaging unit is further adapted to determine the noise power by averaging said noise sample estimate power also over a plurality of OFDM symbols.

12. A link quality determination unit according to claim 8, wherein:
said noise sample estimate determining unit is adapted to determine said noise sample estimates for each subcarrier in each OFDM symbol on the basis of the respective received signal sample on the respective subcarrier in the respective OFDM symbol, of subcarrier symbol information about the subcarrier symbol transmitted on the respective subcarrier in the respective OFDM symbol, and of the channel coefficient estimate on the respective subcarrier.

13. A link quality determination unit according to claim 9, wherein:
said noise sample estimate determining unit is adapted to determine said noise sample estimates for each subcarrier in each OFDM symbol on the basis of the respective received signal sample on the respective subcarrier in the respective OFDM symbol, of subcarrier symbol information about the subcarrier symbol transmitted on the respective subcarrier in the respective OFDM symbol, and of the channel coefficient estimate on the respective subcarrier.

14. A link quality determination unit according to claim 4, wherein:

said noise sample estimate determining unit is adapted to determine said noise sample estimates for each subcarrier in each OFDM symbol on the basis of the respective received signal sample on the respective subcarrier in the respective OFDM symbol, of subcarrier symbol information about the subcarrier symbol transmitted on the respective subcarrier in the respective OFDM symbol, and of the channel coefficient estimate on the respective subcarrier.

15. A link quality determination unit according to claim 12, wherein:

said noise sample estimate determining unit comprises a multiplier for multiplying the channel coefficient estimate on the respective subcarrier with the subcarrier symbol information and a subtractor for subtracting the multiplication result from the respective received signal sample, the output of the subtractor constituting said noise sample estimates for each subcarrier in each OFDM symbol.

16. A link quality determination unit according to claim 13, wherein:

said noise sample estimate determining unit comprises a multiplier for multiplying the channel coefficient estimate on the respective subcarrier with the subcarrier symbol information and a subtractor for subtracting the multiplication result from the respective received signal sample, the output of the subtractor constituting said noise sample estimates for each subcarrier in each OFDM symbol.

17. A link quality determination unit according to claim 14, wherein:

said noise sample estimate determining unit comprises a multiplier for multiplying the channel coefficient estimate on the respective subcarrier with the subcarrier symbol information and a subtractor for subtracting the multiplication result from the respective received signal sample, the output of the subtractor constituting said noise sample estimates for each subcarrier in each OFDM symbol.

18. A link quality determination unit according to claim 5, wherein:

said noise sample estimate determining unit comprises a multiplier for multiplying the channel coefficient estimate on the respective subcarrier with the subcarrier symbol information and a subtractor for subtracting the multiplication result from the respective received signal sample, the output of the subtractor constituting said noise sample estimates for each subcarrier in each OFDM symbol.

19. A link quality determination unit according to claim 1, wherein:

the OFDM symbols are transmitted in bursts of a frame, each burst comprises a preamble part and one or more protocol data units and each preamble part of each burst comprises one or more OFDM training symbols used by the channel coefficient estimator for the channel estimation.

20. A link quality determination unit according to claim 4, wherein:

the OFDM symbols are transmitted in bursts of a frame, each burst comprises a preamble part and one or more protocol data units and each preamble part of each burst comprises one or more OFDM training symbols used by the channel coefficient estimator for the channel estimation.

21. A link quality determination unit according to claim 12, wherein:

the OFDM symbols are transmitted in bursts of a frame, each burst comprises a preamble part and one or more protocol data units and each preamble part of each burst comprises one or more OFDM training symbols used by the channel coefficient estimator for the channel estimation; and

said subcarrier symbol information is the subcarrier symbol information of the one or more OFDM training symbols of the preamble part of a burst.

22. A link quality determination unit according to claim 13, wherein:

the OFDM symbols are transmitted in bursts of a frame, each burst comprises a preamble part and one or more protocol data units and each preamble part of each burst comprises one or more OFDM training symbols used by the channel coefficient estimator for the channel estimation; and

said subcarrier symbol information is the subcarrier symbol information of the one or more OFDM training symbols of the preamble part of a burst.

23. A link quality determination unit according to claim 14, wherein:

the OFDM symbols are transmitted in bursts of a frame, each burst comprises a preamble part and one or more protocol data units and each preamble part of each burst comprises one or more OFDM training symbols used by the channel coefficient estimator for the channel estimation; and

said subcarrier symbol information is the subcarrier symbol information of the one or more OFDM training symbols of the preamble part of a burst.

24. A link quality determination unit according to claim 12, wherein:

the OFDM symbols are transmitted in bursts of a frame, each burst comprises a preamble part and one or more protocol data units and each preamble part of each burst comprises one or more OFDM training symbols used by the channel coefficient estimator for the channel estimation; and

said subcarrier symbol information is a subcarrier symbol estimate information of data-bearing subcarrier symbols within the data packet units within a burst.

25. A link quality determination unit according to claim 13, wherein:

the OFDM symbols are transmitted in bursts of a frame, each burst comprises a preamble part and one or more protocol data units and each preamble part of each burst comprises one or more OFDM training symbols used by the channel coefficient estimator for the channel estimation; and

said subcarrier symbol information is a subcarrier symbol estimate information of data-bearing subcarrier symbols within the data packet units within a burst.

26. A link quality determination unit according to claim 14, wherein:

the OFDM symbols are transmitted in bursts of a frame, each burst comprises a preamble part and one or more protocol data units and each preamble part of each burst comprises one or more OFDM training symbols used by the channel coefficient estimator for the channel estimation; and

said subcarrier symbol information is a subcarrier symbol estimate information of data-bearing subcarrier symbols within the data packet units within a burst.

27. A link quality determination unit according to claim 24, wherein:

said subcarrier symbol estimate information of data-bearing subcarrier symbols within the protocol data units within a burst is generated by a remodulation unit which is adapted for remodulating of OFDM symbol decisions output by the demodulator.

28. A link quality determination unit according to claim 25, wherein:

said subcarrier symbol estimate information of data-bearing subcarrier symbols within the protocol data units within a burst is generated by a remodulation unit which is adapted for remodulating of OFDM symbol decisions output by the demodulator.

29. A link quality determination unit according to claim 26, wherein:

said subcarrier symbol estimate information of data-bearing subcarrier symbols within the protocol data units within a burst is generated by a remodulation unit which is adapted for remodulating of OFDM symbol decisions output by the demodulator.

30. A link quality determination unit according to claim 21, wherein:

said subcarrier symbol estimate information of data-bearing subcarrier symbols within the protocol data units within a burst is generated by a reencoding/remodulation unit which is adapted for re-encoding/re-modulating of the output by the decoder.

31. A link quality determination unit according to claim 22, wherein:

said subcarrier symbol estimate information of data-bearing subcarrier symbols within the protocol data units within a burst is generated by a reencoding/remodulation unit which is adapted for re-encoding/re-modulating of the output by the decoder.

32. A link quality determination unit according to claim 23, wherein:

said subcarrier symbol estimate information of data-bearing subcarrier symbols within the protocol data units within a burst is generated by a reencoding/remodulation unit which is adapted for re-encoding/re-modulating of the output by the decoder.

33. A link quality determination unit according to claim 6, wherein:

said second link quality measure determination unit determines the second link quality measure at several instances during a frame or during bursts and calculates a modified second link measure as a cumulative density function.

34. A link quality determination unit according to claim 7, wherein:

said second link quality measure determination unit determines the second link quality measure at several instances during a frame or during bursts and calculates a modified second link measure as a cumulative density function.

35. A link quality determination unit according to claim 1, further comprising:

a noise power determination unit adapted to determine the noise power; and

a second link quality measure determination unit which is adapted to determine a second link quality measure representing the average subcarrier signal-to-noise power ratio on the basis of the noise power as determined by the noise power determination unit; and

wherein said link quality determination unit comprises an overall link quality measure determination unit for determining an overall link quality measure by combining the first and second link quality measures.

36. A link quality determination unit according to claim 4, further comprising:

a noise power determination unit adapted to determine the noise power; and

a second link quality measure determination unit which is adapted to determine a second link quality measure representing the average subcarrier signal-to-noise power ratio on the basis of the noise power as determined by the noise power determination unit; and

wherein said link quality determination unit comprises an overall link quality measure determination unit for determining an overall link quality measure by combining the first and second link quality measures.

37. A transmission link property selector including a transmission link property decider for selecting transmission properties of an OFDM transmission link depending on a transmission link quality measure, wherein:

said transmission link property selector comprises a link quality determining unit in accordance with claim 1 for outputting said link quality measure, and said transmission link property decider is adapted to decide on the transmission properties of said transmission link on the basis of the link quality measure output by the link quality determination unit.

38. A selector in accordance with claim 37, wherein:

said transmission link property decider is adapted to decide, on the basis of the link quality measure, as the transmission property the physical layer mode used for the OFDM transmission.

39. A selector in accordance with claim 37, wherein:

said transmission link property decider is adapted to decide between different physical layer modes by using a hysteresis.

40. A selector in accordance with claim 37, wherein:

said transmission link property decider is adapted to decide, on the basis of the link quality measure, as the transmission property the transmission power used for the OFDM transmission.

41. A link quality determination method for determining a link quality of a transmission link between an OFDM transmitter and an OFDM receiver of an OFDM transmission system comprising the following steps:

determining the signal power variation; and

determining at least a first link quality measure on the basis of the determined signal power variation.

42. A link quality determination method according to claim 41, further comprising the steps of:

determining the noise power; and

determining a second link quality measure representing the average subcarrier signal-to-noise power ratio.

43. A link quality determination method according to claim 41, further comprising the steps of:

determining the second link quality measure at several instances during a frame or during bursts; and

determining a modified second link measure as a cumulative density function.

44. A link quality determination method according to claim 41, further comprising the steps of:

determining estimates of the channel coefficients for the respective subcarriers;

determining the signal power by averaging the power of the estimated channel coefficients over a plurality of subcarriers; and

determining as the signal power variation the signal power variance by determining the difference between the power of the estimated channel coefficients on the respective subcarrier and the signal power, by determining the absolute value of the difference, by squaring the absolute value of the difference, and by averaging the squared absolute value over a plurality of subcarriers.

45. A link quality determination method according to claim 44, further comprising the steps of:

determining said first link quality measure by determining a ratio of the signal power variation to the squared signal power.

46. A link quality determination method for determining a link quality of a transmission link between an OFDM transmitter and an OFDM receiver of an OFDM transmission system, further comprising the steps of:

determining the signal-to-noise variation; and

determining at least a first link quality measure on the basis of the determined signal-to-noise variation.

47. A link quality determination method according to claim 46, further comprising the steps of:

determining estimates of the channel coefficients for the respective subcarriers;

determining a noise sample estimate for each subcarrier in each OFDM symbol; and

determining as the signal-to-noise variation the signal-to-noise variance by determining a SNR mean value by respectively summing the power of the channel estimation coefficients and the power of the noise samples over the plurality of subcarriers and by forming the ratio thereof and by determining the ratio of the power of the respective channel coefficient estimate for the respective subcarrier to the power of the respective noise sample estimate for the respective subcarrier, by subtracting from this ratio the SNR mean value, determining the absolute value of the subtraction result, squaring the absolute value and averaging the determined absolute values over a plurality of subcarriers.

48. A link quality determination method according to claim 47, further comprising the steps of:

determining said noise sample estimates for each subcarrier in each OFDM symbol on the basis of the respective received signal sample on the respective subcarrier in the respective OFDM symbol, of subcarrier symbol information about the subcarrier symbol transmitted on the respective subcarrier in the respective OFDM symbol, and of the channel coefficient estimate on the respective subcarrier.

49. A link quality determination method according to claim 41, further comprising the steps of:

determining said noise sample estimates for each subcarrier in each OFDM symbol by multiplying the channel coefficient estimate on the respective subcarrier with the subcarrier symbol information and subtracting the multiplication result from the respective received signal sample.

50. A link quality determination method according to claim 48, further comprising the steps of:

determining said noise sample estimates for each subcarrier in each OFDM symbol by multiplying the channel coefficient estimate on the respective subcarrier with the subcarrier symbol information and subtracting the multiplication result from the respective received signal sample.

51. A link quality determination method according to claim 41, further comprising the steps of:

determining the noise power; and

determining a second link quality measure representing the average subcarrier signal-to-noise power ratio; and

determining an overall link quality measure by combining the first and second link quality measures.

52. A link quality determination method according to claim 46, further comprising the steps of:

determining the noise power; and

determining a second link quality measure representing the average subcarrier signal-to-noise power ratio; and

determining an overall link quality measure by combining the first and second link quality measures.

53. A processing device of an OFDM system including a noise power determination unit adapted to determine the noise power of a received signal in an OFDM system, comprising:

a noise sample estimate determining unit which is adapted to determine a noise sample estimate for each subcarrier in each OFDM symbol; and

a noise sample averaging unit which is adapted to determine the noise power by averaging the noise sample estimate power over one or more subcarriers;

wherein said noise power determining unit is further adapted to determine the noise power by averaging said noise sample estimate power also over one or more OFDM symbols; and

wherein said noise sample estimate determining unit is adapted to determine said noise sample estimates for each subcarrier in each OFDM symbol on the basis of the respective received signal sample on the respective subcarrier in the respective OFDM symbol, of subcarrier symbol information about the subcarrier symbol transmitted on the respective subcarrier in the respective OFDM symbol, and of the channel coefficient estimate on the respective subcarrier.

54. A processing device according to claim 53, wherein said noise sample estimate determining unit comprises a multiplier for multiplying the channel coefficient estimate on the respective subcarrier with the subcarrier symbol information and a subtractor for subtracting the multiplication result from the respective received signal

sample, the output of the subtractor constituting said noise sample estimates for each subcarrier in each OFDM symbol.

55. A processing device according to claim 53, wherein the OFDM symbols are transmitted in bursts of a frame, each burst comprises a preamble part and one or more protocol data units and each preamble part of each burst comprises one or more OFDM training symbols used by the channel coefficient estimator for the channel estimation.

56. A processing device according to claim 55, wherein said noise sample estimate determining unit comprises a multiplier for multiplying the channel coefficient estimate on the respective subcarrier with the subcarrier symbol information and a subtractor for subtracting the multiplication result from the respective received signal sample, the output of the subtractor constituting said noise sample estimates for each subcarrier in each OFDM symbol; and

wherein said subcarrier symbol information is the subcarrier symbol information of the one or more OFDM training symbols of the preamble part of a burst.

57. A processing device according to claim 55, wherein said noise sample estimate determining unit comprises a multiplier for multiplying the channel coefficient estimate on the respective subcarrier with the subcarrier symbol information and a subtractor for subtracting the multiplication result from the respective received signal sample, the output of the subtractor constituting said noise sample estimates for each subcarrier in each OFDM symbol; and

wherein said subcarrier symbol information is a subcarrier symbol estimate information of data-bearing subcarrier symbols within the protocol data units within a burst.

58. A processing device according to claim 55, wherein said noise sample estimate determining unit comprises a multiplier for multiplying the channel coefficient estimate on the respective subcarrier with the subcarrier symbol information and a

subtractor for subtracting the multiplication result from the respective received signal sample, the output of the subtractor constituting said noise sample estimates for each subcarrier in each OFDM symbol; and

wherein said subcarrier symbol estimate information of data-bearing subcarrier symbols within the protocol data units within a burst is generated by a remodulation unit which is adapted for remodulating of OFDM symbol decisions output by the demodulator.

59. A processing device according to claim 55, wherein said noise sample estimate determining unit comprises a multiplier for multiplying the channel coefficient estimate on the respective subcarrier with the subcarrier symbol information and a subtractor for subtracting the multiplication result from the respective received signal sample, the output of the subtractor constituting said noise sample estimates for each subcarrier in each OFDM symbol; and

wherein said subcarrier symbol estimate information of data-bearing subcarrier symbols within the protocol data units within a burst is generated by a reencoding/re-modulation unit which is adapted for re-encoding/re-modulating of the output by a decoder.

60. A method for determining the noise power in an OFDM system, comprising the steps of:

determining a noise sample estimate for each subcarrier in each OFDM symbol; and

determining the noise power by averaging the noise sample estimate power over a plurality of subcarriers;

wherein said step for determining the noise power further comprises the step of determining the noise power by averaging said noise sample estimate power also over one or more of the OFDM symbols; and

wherein said step for determining the noise sample estimates comprises the steps of determining said noise sample estimates for each subcarrier in each OFDM symbol on the basis of the respective received signal sample on the respective subcarrier in the respective OFDM symbol, of subcarrier symbol information about the subcarrier symbol transmitted

on the respective subcarrier in the respective OFDM symbol, and of the channel coefficient estimate on the respective subcarrier.

61. A method according to claim 60, comprising the step of determining said noise sample estimates for each subcarrier in each OFDM symbol by multiplying the channel coefficient estimate on the respective subcarrier with the subcarrier symbol information and subtracting the multiplication result from the respective received signal sample.

62. A method according to claim 60, wherein the OFDM symbols are transmitted in bursts of a frame, each burst comprises a preamble part and one or more protocol data units and each preamble part of each burst comprises one or more OFDM training symbols used by the channel coefficient estimator for the channel estimation.

63. A method according to claim 60, wherein said subcarrier symbol information is the subcarrier symbol information of the one or more OFDM training symbols of the preamble part of a burst.

64. A method according to claim 60, wherein said subcarrier symbol information is a subcarrier symbol estimate information of data-bearing subcarrier symbols within the protocol data units within a burst.

65. A method according to claim 60, wherein said subcarrier symbol estimate information of data-bearing subcarrier symbols within the protocol data units within a burst is generated by remodulating of OFDM symbol decisions output by the demodulator.

66. A method according to claim 60, wherein said subcarrier symbol estimate information of data-bearing subcarrier symbols within the protocol data units within a burst is generated by reencoding/re-modulating of the output by a decoder.

67. A transmission link property selector including a transmission link property decider for selecting transmission properties of an OFDM transmission link depending on a transmission link quality measure, wherein:

said transmission link property selector comprises a link quality determining unit in accordance with claim 4 for outputting said link quality measure, and said transmission link property decider is adapted to decide on the transmission properties of said transmission link on the basis of the link quality measure output by the link quality determination unit.